



**INTERNATIONAL JOURNAL OF
PHARMACEUTICAL SCIENCES**
[ISSN: 0975-4725; CODEN(USA): IJPS00]
Journal Homepage: <https://www.ijpsjournal.com>



Research Article

Formulation And Evaluation Of Herbal Scrub

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ARTICLE INFO

Received: 07 June 2024

Accepted: 19 June 2024

Published: 22 June 2024

Keywords:

Pigmentation, White heads,
Black heads, Glowing skin
etc.

DOI:

10.5281/zenodo.12300405

ABSTRACT

Scrubbing Soap are the agents which are use to remove the dead cell from skin , pigmentation and blackheads, white heads and make skin glowing, smooth, soft and healthy. Scrub can be directly applied onto the skin by gently massage is recommended on application of the scrub which helps to improve blood circulation and increase oxygen supply to all surface of the skin. In today's human life face scrubs are quite popular and achieved more amount of success in low cost. The prepared scrub was evaluated using varies parameters and was found to be satisfactory after application of the scrub it was non irritant to skin and the skin became even more softer.

INTRODUCTION

Aim And Objective:

The aim of a herbal scrub is to exfoliate and rejuvenate the skin using natural ingredients. The objectives of using a herbal scrub include:

1. Exfoliation: Removing dead skin cells and impurities from the skin's surface, promoting a smoother and brighter complexion.
2. Skin Renewal: Stimulating cell regeneration and promoting healthier skin by unclogging pores and improving blood circulation.
3. Nourishment: Providing essential nutrients to the skin through natural ingredients like Tulsi, turmeric, and almond oil, which can help moisturize and revitalize the skin.

4. Gentle Cleansing: Cleansing the skin without harsh chemicals, making it suitable for sensitive skin types.

5. Aromatherapy: Some herbal scrubs, like those containing sandalwood powder, offer aromatherapeutic benefits, promoting relaxation and stress relief during the skincare routine.


By incorporating a herbal scrub into your skincare regimen, you can achieve a more radiant and rejuvenated complexion while benefiting from the natural properties of the ingredients used.

Herbal cosmetics:

Herbal cosmetics are beauty products that are made using natural ingredients derived from

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Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.



plants, herbs, and botanical extracts. These products are often free from harsh chemicals and synthetic additives, making them a popular choice for those looking for more natural skincare and beauty options. They can include things like herbal oils, herbal face masks, herbal shampoos, and more. They're great for people who prefer a more holistic approach to their beauty routine!

Cosmetics science:

Cosmetic science, also known as cosmetology, is all about studying beauty products like skincare creams, makeup, and hair care items to understand how they work on our skin and hair. Cosmetic scientists create and test these products to make sure they are safe and effective for enhancing beauty and improving skin health. In today's world, cosmetics play a significant part in beautifying and changing the appearance of skin for both men and women. Starting in the 1990s, cosmetic manufacturers used the word "cosmetics" to characterize over-the-counter skin care products that promise therapeutic benefit from the inclusion of plant-based active ingredients such as alpha-hydroxy acid, retinoic acid, ascorbic acid, and coenzyme. These active compounds perform several functions, including increasing skin appearance and beauty.

Cosmetology, another name for cosmetic science, is the study of beauty products, such as makeup, skincare creams, and hair care products, to determine how they affect our skin and hair. These products are developed and tested by cosmetic scientists to ensure their safety and efficacy in augmenting beauty and promoting skin health. In the modern world, cosmetics have a big impact on how both men and women look and feel about their skin. The term cosmeceuticals was first used by cosmetic producers in the 1990s to describe over-the-counter skin care products that included active compounds derived from plants, such as coenzyme, retinoic acid, alpha-hydroxy acid, and

ascorbic acid, and promised therapeutic benefits. These active ingredients enhance the beauty and look of skin among other things.

The Drugs and Cosmetics Act defines cosmetics as articles that are meant to be rubbed, poured, sprinkled, sprayed, introduced into, or applied in any other way to the human body or any portion of it in order to cleanse, beautify, promote attractiveness, or change appearance. The cosmetic is not covered by a drug license preview. Herbal cosmetics are concoctions made from phytochemicals derived from a range of botanical sources. These compounds impact the skin's functions and supply the nutrients required for healthy, supple skin. They also delay the aging process of the skin by reducing wrinkles, offer antioxidant protection against UV rays, and stop the breakdown of collagen.

Summertime dehydration from prolonged heat exposure to the skin results in wrinkles, freckles, blemishes, pigmentation, and sunburns. Extreme cold can damage skin by causing cuts, fissures, maceration, and infections. Skin diseases are common in persons of all ages and can be caused by exposure to biological agents, chemicals, bacteria, and other environmental contaminants; hunger can also have a minor role. Their only source of support was the natural knowledge contained in the Ayurvedic. Many herbs and plants were used in the science of ayurveda to create cosmetics that were meant to enhance beauty and provide protection from outside influences. Using natural substances means that your skin's surface needs to be cleansed often to get rid of impurities, dead cells, crusts, oil, and other secretions in order to be healthy and look nice. Face soap, scrub, serum, cream, face pack, etc.

Ancient history of herbal scrub:

In ancient times, herbal scrubs have a rich history across various cultures. Ancient civilizations like the Egyptians, Greeks, Romans, and Indians

utilized herbal ingredients such as plants, flowers, and natural exfoliants to create scrubs for skincare. These herbal scrubs were valued for their ability to cleanse, exfoliate, and nourish the skin, reflecting the early recognition of the benefits of natural ingredients in skincare routines.

What is Exfoliant:

A facial scrub uses small particles, beads or chemicals to get rid of the old skin cells and make way for new once in a process known as exfoliation. The agents are used for exfoliation are known as exfoliants. Exfoliating agents are those used to remove dead cells present on the skin and boost blood circulation, giving renewed and glowing skin. It keeps face free from dust, grime and oils which are also beneficial in keeping a skin pore clean. Exfoliation involves the removal of the oldest dead skin cells from the skin's surface. The word comes from the Latin word exfoliate (to strip off leaves). Exfoliation is involved in all facials and can be achieved by the mechanical or chemical methods, such chemical peels or microdermabrasion. Exfoliants are frequently promoted as remedies that enhance health, beauty, or a young appearance.

There are two ways to exfoliant the skin.

1. Physical Exfoliation
2. Chemical Exfoliation

1.Physical Exfoliation:

Abrasive agents are used to remove dead cells by gently rubbing the skin in circular motion with hand or by rough sponge.[7] This category includes washcloths, specialized beauty tools such as exfoliating brushes or gloves. Physical exfoliation removes the topmost layer of dead skin to reveal the fresh skin cells underneath.[8]

2.Chemical Exfoliation:

Chemically dissolves the initial glue that holds dead skin cells together and then penetrates the upper layer of the skin for complete removal of dead cells. [9] Chemical exfoliation involves a

topical acid, such as salicylic acid, which dissolves dead skin cells. They typically work by weakening the bonds that hold skin cells together, allowing for dead skin to slough away easily.

The agents are used for exfoliation are known as exfoliants. This word comes from Latin word exfoliant (to strip off leaves). Exfoliation is involved in all facial and can be achieved by mechanical or chemical means such as, microdermabrasion or chemical peel. Exfoliants are often advertised as treatments that promote beauty, youthful, appearance or health.

Benefits of using an exfoliant:

1. Helps to removing dirt and grime
2. Helps even out your skin tone
3. Improves the efficacy and moisturize the skin
4. Prevent the spots and give clear complexion
5. Cleans skin before shaving, removes dead skin cells that clog up razor and improve shaving.
6. Provide glow to the skin.
7. Smooths the skin
8. Remove acnes scars.
9. Helps to unclog pores.
10. It helps other skincare products to penetrate deeper.
11. Boosts circulation.

Ideal properties of an exfoliant]

1. Non- toxic
2. Non- irritant
3. Non- sticky
4. Remove dead skin

Precaution to be taken while applying an exfoliant:

1. An exfoliant is selected based on the skin type.
2. Excessive exfoliating and rubbing can damage the skin
3. Do not exfoliant skin if any open wounds, cuts, and sunburns present.
4. Apply twice a week.

Difference between Herbal and Synthetic scrub

Herbal Scrub	Synthetic Scrub
herbal products are derived naturally, they are entirely devoid of any dangerous ingredients.	they are synthetically derived, synthetic products may contain certain hazardous substances.
Products made from plants for their medical properties are referred to as herbal.	Products that are made from chemicals are referred to as synthetic.
Safer to use than cosmetics made of chemical.	They may be harmful for sensitive skin. More side effect than herbal product
Synthetic refer to product that are prepared from chemicals.	greater adverse effects than with herbal products.
E.g. Plum Green Tea gentle revival face scrub.	E.g. Cetaphil Extra gentle daily scrub.

Poly herbal scrub

The herbal face scrub is a popular face treatment which is made from natural ingredients from plants such as herbs, leaves, fruits.

tree barks, cereals, seeds, beans, or flowers that can be used to exfoliate the dead skin cells and 2 moisturize our skin.

1) How to use a face scrub

a) Step 1-Cleanse. The first step on how to do scrub on face is to cleanse the skin....

b) Step 2-Take The Right Amount. Take a dime size amount of your face scrub and apply it to your palm....

c) Step 3-And On To Your Face.....

d) Step 4-Massage Well....

e) Step 5-Rinse Away....

f) Step 6The skin on the face has some unique characteristics compared to the skin on other parts of the body. Let's explore the layers and structures of the facial skin:

SKIN

Skin is the protective outer layer of our body that shields from harm and helps regulate body temperature. It consists of multiple layers, with the epidermis being the outermost layer responsible for waterproofing and protection, below the epidermis lies the dermis, which contains blood vessels, nerves, and hair follicles.

Skin Anatomy:

1. **Epidermis:**

The epidermis is the outermost layer of the skin on the face. It consists of several sublayers, including the stratum corneum, stratum granulosum, stratum

spinosum, and stratum basale. The stratum corneum is the topmost layer and acts as a protective barrier, preventing the loss of moisture and protecting against external factors. The stratum basale is the deepest layer and contains cells that continuously divide, replenishing the upper layers of the epidermis.

Dermis

The dermis is the layer beneath the epidermis and provides structural support to the facial skin. It is thicker than the epidermis and contains various components such as blood vessels, nerves, hair follicles, sweat glands, and sebaceous glands. The dermis is composed of two main layers: the papillary dermis and the reticular dermis. The papillary dermis is closer to the epidermis and contains small blood vessels and sensory nerve endings. The reticular dermis is deeper and consists of collagen and elastin fibers, which give the skin strength and elasticity.

Subcutaneous Tissue:

The subcutaneous tissue, also known as the hypodermis, is the deepest layer of the facial skin. It is composed of fat cells (adipocytes), blood vessels, and connective tissue. The subcutaneous tissue provides insulation, cushioning, and energy storage. It also helps to maintain the shape and contour of the face.

- **Hair Follicles:** Hair follicles are found on the face and produce hair. These follicles are responsible for the growth of facial hair, such as eyebrows, eyelashes, and beard hair in men.

Sweat pores:



Sweat pores are tiny openings on the surface of the skin that allow sweat to be released from the sweat glands onto the skin's surface. These pores are essential for regulating body temperature by releasing sweat, which helps cool the body through evaporation. Sweat pores are distributed all over the body, with a higher concentration in areas like the palms, soles of the feet, and underarms. Keeping the sweat pores clean through regular cleansing can help prevent issues like clogged pores and body odor.

Adipose tissue:

Adipose tissue, also known as body fat, is a type of connective tissue found beneath the skin (subcutaneous fat) and around internal organs (visceral fat). It serves various functions such as storing energy, providing insulation, and cushioning organs. Adipose tissue is composed of adipocytes (fat cells) that can expand or shrink depending on energy balance. It also secretes hormones that regulate metabolism. Maintaining a healthy level of adipose tissue is important for overall health and plays a role in body temperature regulation and hormone production.

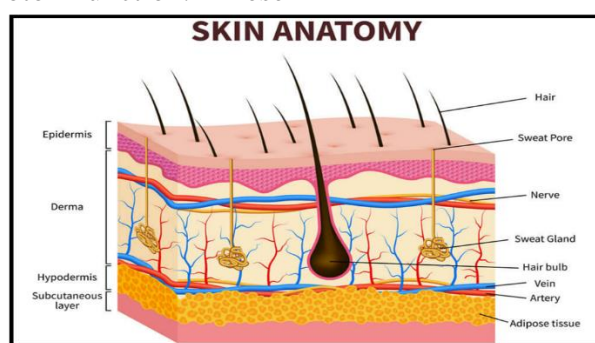
Nerve:

Nerves in the skin of the face play a vital role in sensory perception and motor function. These

nerves are responsible for transmitting sensory information such as touch, temperature, and pain from the skin to the brain. They also control muscle movements in the face, allowing for expressions like smiling or frowning. The trigeminal nerve is the primary nerve responsible for sensation in the face, dividing into three branches that innervate different areas. Damage to facial nerves can lead to issues with sensation, muscle control, or facial expressions.

Sweat Gland:

Sweat glands in the skin of the face, like in other parts of the body, are essential for regulating body temperature. The face has two types of sweat glands: eccrine sweat glands and apocrine sweat glands. Eccrine sweat glands are more numerous and are responsible for producing sweat that is mostly composed of water and salts. They help cool the body by releasing sweat onto the skin's surface. Apocrine sweat glands, found in areas like the armpits and groin, produce a thicker secretion that can be broken down by bacteria, leading to body odor. Proper skincare and hygiene can help maintain the balance of sweat production and keep the face skin healthy.



Advantage Of Herbal Scrub:

1. Gentle on the skin: Herbal scrubs are typically milder and less abrasive, making them suitable for sensitive skin types.
2. Natural exfoliation: The natural ingredients in herbal scrubs help to gently remove dead skin

cells, revealing a smoother and brighter complexion.

3. Unclogs pores: Herbal scrubs can effectively unclog pores, reducing the occurrence of blackheads and whiteheads.

4. Nourishing and moisturizing: Many herbal scrubs contain nourishing ingredients that can hydrate and moisturize the skin, leaving it soft and supple.

5. Reduced risk of irritation: Since herbal scrubs are made from natural ingredients, they are less likely to cause skin irritation or allergic reactions.

6. Ideal Properties of Scrub -

It should be Non toxic

Possess small gritty particles

Mild abrasive

Non irritating

Disadvantage Of Herbal Scrub:

1. Over-exfoliation: Using a scrub too frequently or with too much pressure can lead to over-exfoliation, causing redness, irritation, or dryness.

2. Not suitable for all skin types: Some skin types, such as sensitive or acne-prone skin, may not tolerate scrubs well and could experience increased sensitivity or breakouts.

3. Risk of micro-tears: If the scrub particles are too rough or jagged, they can create tiny tears in the skin, leading to irritation or infection.

4. Uneven results: Scrubs may not provide consistent exfoliation, resulting in uneven texture or patchy skin.

5. Potential for irritation: Some scrubs contain fragrances or harsh ingredients that can irritate the skin, especially for those with sensitive skin.

- Sweat Glands: Sweat glands are present on the face and help regulate body temperature by producing sweat-Finish Off With A Moisturiser

Ingredients:

1. Tulsi:



- Synonym- Tulsi
- Biological source - It is made out of dried *Ocimum sanctum* L leaves, which are a member of the Lamiaceae.
- Description Colour – Green
Odour – Aromatic
Taste – Pungent
- Principal chemical components: rosmarinic acid, ursolic acid, and oleanolic acid
- Applications Enhances skin texture, minimizes acne and pimples, and cleanses

2. Turmeric:



- Synonym-Curcuma longa
- Biological source: Dried rhizomes of the family *Curcuma longa* constituent Zingiberaceae.
- Characteristics:
 - Color: Yellow;
 - Odor: Aromatic;
 - Taste: Bitter
- Chief chemical constituents - Curcumin, Curcuminoids
- Uses -Reduce acne, Glowing skin, Lightens

3. Honey



- **Synonym-** Shahad
- biological source: It is made of liquid sugar that is made from floral nectar by the Honey-bee *Apis mellifica* belonging to family Apidae.
- **Description** Colour- Yellow brown coloured liquid
Odour – Sweet
Taste - Sweet
- **Chief chemical constituents** Dextrose and laevulose (70-80%) Dextrin (0.06-1.25%) Proteins
- **Applications:** beneficial for aging and wrinkles Avoid breakouts Clear the pores of any debris.

4. Multan clay



- **Synonym-** Multan clay
- **biological origin:** Hydrous aluminum silicates make up its composition (clay minerals)
- **Description** Colour- White Odour-Pleasant
Taste – Pleasant
- **Chief chemical constituents** Montmorillonite, Kaolinite, Attapulgit
- **Uses-:** Blackhead removal, oiliness reduction, and skin nourishing

5. sandal wood:



- **Synonym-** Sandalwood tree
- **Biological source** : Biological source: Dried bark from *Santalum album*, a member of the Santalaceae family.
- **Description** Colour- Brown-Odour – Aromatic Taste – Unpleasant
- **Chief chemical constituents** Santalol, Cedrol, Esters
- **Uses** – Soothe sunburn, remove suntan, Reduce signs of aging skin

6.walnut:



Consuming walnuts are an excellent option for skin and body. Even several cosmetics and skin care product manufacturer include walnuts in their material because they are full necessary for our skin. ORT eral co of nutrition which is Besides skin care, walnuts are very popular for hair color too.

7. khuskhus



strong anti- inflammatory ability, and thus actively used in Ayurvedic preparations for treating inflammation. This magical seed treats sleep disorders like insomnia . Khus Khus can also be used to treat emotional problems like anger or distress that may be the cause of sleeplessness. It has good ratings for dietary fiber, vitamins, minerals (iron and calcium), and omega-6 fatty

acids, among other things. Due to its therapeutic qualities, this herb is used externally in bath soaps.

8. Moringa Leaves Powder:



- Synonyms*: Drumstick tree leaves
- Biological Source*: Moringa oleifera tree
- Description and Color*: Small to medium-sized, oval-shaped, bright green leaves
- Chemical Constituents*: Rich in vitamins (A, C), minerals (iron, calcium, potassium), antioxidants, amino acids, phytochemicals (quercetin, kaempferol)
- Uses*: Consumed fresh in salads, cooked in soups or curries, dried and powdered for teas or supplements; known for antioxidant, anti-inflammatory, and nutrient-rich properties.

9: Almond Oil



- Synonyms*: Sweet almond oil
- Biological Source*: Prunus dulcis (almond tree)
- Description and Color*: Light yellow to pale golden color, nutty aroma
- Chemical Constituents*: Rich in oleic acid, linoleic acid, vitamins (E, A), minerals (zinc, magnesium)

- Uses*: Skincare, haircare, massage; moisturizes skin, reduces inflammation, promotes healthy hair and scalp.

10: Cofee Beans



- Synonyms*: Coffee grounds, coffee beans
- Biological Source*: Coffea plant seeds
- Description and Color*: Fine dark brown powder
- Chemical Constituents*: Contains caffeine, antioxidants, chlorogenic acid
- Uses*: Brewing coffee, flavoring in baking, cooking, skincare (exfoliation), natural dye

Formulation Table:

INGREDIENTS	Formula (g)
Tulsi	15 gm
Turmeric	10gm
Honey	15gm
Multan clay	20gm
Sandal wood powder	6gm
Walnut	10gm
Khus khus	10gm
Moringa leaves powder	10gm
Almond oil	12 ml
Coffee beans powder	9gm

Procedure:

To create a herbal scrub using the ingredients you listed, follow these step-by-step instructions:

1. Prepare the Ingredients:

- Measure out the quantities of each ingredient in grams: Tulsi, turmeric, honey, Multani clay, sandalwood powder, walnut, khus khus, moringa leaves powder, almond oil, and coffee beans powder.

2. Grind the Ingredients:

- Grind the coffee beans to a fine powder consistency using a grinder or mortar and pestle.

- Crush the walnut into small pieces to add texture to the scrub.

3. Mix the Dry Ingredients:

- In a mixing bowl, combine the ground coffee beans, Tulsi, turmeric, Multani clay, sandalwood powder, khus khus, and moringa leaves powder. Mix well to ensure even distribution of the ingredients.

4. Add the Wet Ingredients:

- Add honey and almond oil to the dry mixture. Mix thoroughly to form a paste-like consistency. Adjust the amount of almond oil to achieve the desired texture.

5. Incorporate the Walnut:

- Gently fold in the crushed walnut into the mixture. Ensure that the walnut is evenly distributed throughout the scrub.

6. Finalize the Scrub:

- Check the consistency of the scrub. If it's too dry, add a bit more almond oil; if it's too wet, add a bit more Multani clay.

- Transfer the scrub into a clean, airtight container for storage.

Your herbal scrub is now ready to use! Apply a small amount to damp skin, gently massage in circular motions, and rinse off with warm water to reveal smoother and refreshed skin.

Application:

Using a face scrub can be beneficial for your skin as it helps to exfoliate and remove dead skin cells, unclog pores, and promote a smoother complexion. Here are some tips on how to use a face scrub effectively:

1. Choose the scrub: Look for a face scrub that is suitable for your skin type. If you have sensitive skin, opt for a gentle scrub with smaller exfoliating particles. For oily or acne-prone skin, consider a scrub with ingredients like salicylic acid to help control excess oil and prevent breakouts.

2. Cleanse your face: Before using a face scrub, cleanse your face with a gentle facial cleanser to remove any dirt, oil, or makeup. This will ensure that the scrub can work effectively on clean skin.

3. Apply the scrub: Take a small amount of the face scrub and apply it to damp skin. Gently massage the scrub onto your face using circular motions, focusing on areas that tend to be more congested or have rough texture, such as the forehead, nose, and chin. Avoid scrubbing too harshly, as it can irritate the skin.

4. Rinse thoroughly: After massaging the scrub onto your face for about a minute, rinse it off with lukewarm water. Make sure to remove all traces of the scrub from your skin.

5. Moisturize: After using a face scrub, it's important to moisturize your skin to replenish moisture and prevent dryness. Choose a moisturizer suitable for your skin type to keep your skin hydrated and balanced.

6. Frequency: How often you should use a face scrub depends on your skin type and sensitivity. Generally, using a face scrub 1-2 times a week is sufficient for most people. However, if you have sensitive skin, it's best to use a scrub less frequently, such as once every 1-2 weeks



Evaluation parameters of Herbal Exfoliant:

1. Colour: The Colour of the product is checked by visually. It was found to be Pinkish in Colour

2. Odour: The odour of the formulation is evaluated by smelling it. It was found to be Characteristic.
3. pH: The pH of gel was determined using digital pH meter. The pH value of the exfoliant was 7.1 which is considered acceptable to avoid the risk of irritation on application to the skin
4. Consistency: The prepared product was found to be semisolid.
5. Washability: The small amount of sample is applied externally on the surface of skin then washed under running water. It was found to be washable
6. Viscosity: Viscosity of formulation was determined by using Brook field viscometer. The sample (5g) was placed in the sample holder of the viscometer and allowed to settle for 5 min and the viscosity measured at rotating speed of 50rpm at room temperature. The viscosity was found to be 1050 centipose
7. Spreadability: A small amount of sample was placed on glass slide and another slide was placed above them. 100 g of weight was placed on the slide. The time taken for the gel to spread on the slide was recorded and Spreadability measured which was found to be 6.3cm in 5 min.

It was calculated by using following formula:

$$s = m \times l / t$$

Where,

s=spreadability

m=weight placed on the slide

l=length of the glass slide

t=time taken in seconds

8. Irritability: The small amount of the product sample was applied externally on the surface of skin for few minutes and checked for the reaction on the skin. It was found to be non-irritant.
9. Grittiness: Exfoliant needs to have the abrasive property so to satisfy that the

almonds and sugar were powdered and passed through sieve no.30 such that the preparation has few gritty particles.

Result

The herbal scrub's formulation was assessed using various metrics. Visual inspection was performed for every organoleptic property, including color, texture, homogeneity, smell, and consistency. As a result, the formulation did not produce an unpleasant odor, and the color was detected as peanut brown. The formulation's consistency was determined to be appropriate for application on skin. Particles were utilized to assess the preparation's texture and homogeneity on skin, which revealed good and satisfactory results due to the preparation's grittiness and greasiness. Good washability features were discovered, as it can be simply removed with a regular water wash. When the formulation's pH was measured, 6.5 was found to be appropriate for skin. Glass plates were used to assess the spreadability quality, and the results showed that the preparation was easily spreadable and had good uniformity



CONCLUSION

The goal of the current study was to make and assess herbal scrub. Based on the data above, it can be concluded that the new herbal scrub formulation is safe to use and that lentil pulse, when used as a scrubbing/cleaning agent, has positive effects. Additionally, since the majority of

the ingredients are natural, there is less likelihood of side effects. Any skin type, including dry, oily, and normal, can use it. It produces the best outcomes and leaves skin healthy and radiant.

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HOW TO CITE: Anoop Modak, Rutuja Divekar, Priti Jagdale, Formulation And Evaluation Of Herbal Scrub, *Int. J. of Pharm. Sci.*, 2024, Vol 2, Issue 6, 1075-1086. <https://doi.org/10.5281/zenodo.12300405>